

fold has some mealy bloom; dorsum covered with long tufts of white down which is secreted slowly after each molt, in long, flattened masses, two dorsal, two subdorsal, three lateral, the posterior one lower; subdorsal tufts longer than the unpaired dorsal ones. The wool may become 5 mm. long and curls a little. Three stages observed with widths of head 1.1, 1.5 and 2.1 mm.

*Ultimate Stage.*—Head 2.1 mm. Perfectly smooth, uniform opaque yellowish white, head shining and a shade darker, eye black. Segments indistinctly transversely wrinkled. Body robust, thick, as high as wide; thorax very slightly enlarged.

*Food-Plant.*—Butternut. Found at Greenwood Lake, N. J.

Dr. Packard has confounded this species with *Monophadnus caryæ* Norton (5th Rept. U. S. Ent. Comm., 339). Fitch's butternut larvæ, on being bred, prove to belong to *Eriocampa*, and moreover they differ from the hickory larvæ of Norton in being blackish, while the latter are described as greenish beneath the wool.

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## NOTES ON VARIOUS SPECIES OF COLEOPTERA.

### PLATE X.

By F. W. WEBSTER.

It has always appeared to me as a good plan to record the little, detached observations that are made by almost every observing entomologist. Taken individually, these are very often almost devoid of scientific value, but we all of us know how much light some point, of itself unimportant, will throw upon the problem of a life history, when we attempt to work this out, or construct it from the known facts at our disposal. It is as if a huge piece of chinaware were to be dashed into an infinite number of fragments, and these scattered broadcast over the land, and the attempt then made to bring these fragments together, and from them construct the piece anew. It would probably occur that many pieces would have to await the discovery of one, and again, a piece would fit fairly well into the wrong place, and the error could only be detected by the right fragment finally turning up and indicating its proper place.

Some of these notes have been, in the main, recorded elsewhere, but without illustration; and it seems to me to be a matter of mutual benefit to have, somewhere, as accurate illustrations of as many of our species as possible.

My two specimens of *Odontæus filicornis* Say, a male and a female, were taken nearly twenty years ago in a small tract of woods, in northern Illinois, under a decaying log, and I think in late November.

My only specimen of *Tyloderma variegatum* (Horn) was taken in early spring, April, I believe, in an ant hill, located in grass land. It was in hibernation, doubtless, as *T. foveolatum* Say, breeds in the stems of the Evening Primrose, *Oenothera biennis*, and *T. fragariæ*, in the crown of the Strawberry. My *T. variegatum* is from Illinois and collected many years ago.

*Lina scripta* Fab., has increased in some places and become quite destructive to young willow and poplar trees, being especially troublesome in nurseries, where such trees are being grown. It has been found to be a matter of considerable difficulty to manage these insects, especially the adults, with insecticides, and hand picking was found expensive. The present year has witnessed a very material decrease in numbers of not only adults but in a marked degree among the larvæ. The cause of this was pointed out to me by an observing nurseryman, who was not an entomologist, and who stated that there were several other bugs that were destroying the young. On examination, I found these several so called bugs to be the several stages of development of the Spined Soldier Bug, *Podisus spinosus* Dallas. I have since noticed the very young larvæ of the bug, stationed about an egg cluster of the beetle and destroying the young as fast as they hatched, and also attacking much larger larvæ while these were feeding on the leaves. This year, the trouble by the beetle has been so slight as to obviate the necessity of using preventive and remedial measures against them.

Not unfrequently we have statements to the effect that insect larvæ can be killed by shaking them from the plants, in excessively hot weather, especially if the plants are growing in sand. As showing the possibilities in this direction, though I have never had much faith in it, I will say that during the terribly hot weather which occurred in this country about the first of August, while walking along the pavement, I saw an adult *Phytonomus punctatus* Fab., attempt to pass over a portion of the pavement composed of thick glass for the purpose of lighting the room beneath. The beetle had hardly touched the glass before it began to exhibit signs of distress, and ere it had passed over an inch of the glassy space it turned frantically about, but before it could escape from its torture it rolled over and died. The temperature at the time was above 100° Fah., on the sunny side of the walls of the buildings, as indicated by thermometers.

Our Coccinellidæ do not appear to have many Hymenopterous parasites. I have, however, the dried skin of a nearly fullgrown larva of *Coccinella 9-notata* Hbst., probably, punctured by several round holes, showing that a parasite had developed within and several individuals made their escape. Just what the parasite is, aside from its being a Hymenopter, I cannot conjecture, but the holes for escape are unmistakable. This was found at Painesville, Ohio, August 5th.

*Valgus canaliculatus* Fab., Plate X, Fig. 5. This has come to be a fruit tree pest in southern Ohio, where the adult works very serious injuries by eating out the fruit buds of the pear and other fruits, in spring. I can find little regarding this habit in our literature, the single instance of this injury being recorded in *Insect Life*, Vol. 1, p. 53, where Mr. W. W. Meech, Vineland, N. J., stated that the adult ate out the young buds of the quince. The larvæ are known to develop in decaying wood, and my assistant, Mr. Mally, has found the beetles hibernating under decaying stumps.

*Crioceris asparagi* Linn., is making its way slowly but steadily west and southwest into Ohio, seemingly spreading more rapidly in these directions than to the southward. There is hardly a doubt but that it has made its way through New York, and along the south shore of Lake Erie, between the lake and the Alleghany Mountains, broadening out in its area in northwestern Pennsylvania and northeastern Ohio. It now covers the area laying east of a line drawn from a point located some distance west of Cleveland, to near the point where Ohio, Pennsylvania and West Virginia corner upon each other, and the Ohio river ceases to form the boundary line between the two States and passes into Pennsylvania at this place. Professor A. D. Selby, Botanist of the Ohio Experiment Station, informs me that an introduced plant, the Golden Hawk-weed, *Hieracium aurantiacum* L., a native of the Alpine regions of Europe, and introduced into this country prior to 1818, without much doubt, is now apparently spreading over Ohio from western Pennsylvania in almost exactly the same way.

In regard to *Oberca bimaculata* Oliv., I have only to again call attention to a point already published, unillustrated,\* in regard to the astonishing amount of excreta evacuated by the larvæ during the space of 24 hours. The adult is shown, slightly magnified, in Plate X, Fig. 1, the larva, also magnified at the left. These larvæ burrow out the center of the twig as shown in Plate X, Fig. 2, cutting out round holes

\* *Insects of the Year in Ohio*, F. M. Webster and C. W. Mally, Bull. 9, New Ser., U. S. Dept. Agriculture, Division of Entomology, p. 43.

through the walls thus left, for the ejection of the excreta. This excrement is shown at the right of Fig. 1, also enlarged, and falls down on the outside in more or less broken and detached masses. The larva is, when nearly full grown, certainly less than an inch in length, and the amount of these ejections were so astonishing that I determined to get some definite idea of the exact amount. We had at the same time two larvæ under observation in the Insectary, one working in apple, the other in Witch Hazel, *Hamamelis virginiana*, and the castings of each were carefully saved during a period of twenty-four hours. In both cases the weight, 0.05 gram, was the same; and placed end to end, the detached pieces measured twenty-four and three-eighths inches in the one case, the other being too much broken to measure correctly, but probably did not differ materially from the first. This is giving an amount of evacuation for each hour from 11.00 a. m. to 11.00 a. m., the period of time covered by the test, amounting to considerably more in length per hour than the length of the larva itself.

*Cyllene picta* Drury, has come to have a fondness for Osage orange, *Machura aurantiaca*, hardly second to that for the Hickory. From a section of Osage orange fence post, one and one-half feet in length and four inches in diameter, placed in the insectary, there emerged between February 4th and April 14th, twenty-seven individual adults, the greatest number to appear in a single day being four, on February 24th. The beetle is shown in Fig. 3, Plate X, while the closely allied species, *C. robinia* Forst, which breeds in *Robinia pseudacacia* L., is shown in Fig. 4.

To our knowledge of *Cryptorhynchus lapathi* Gyll., Plate X, Fig. 6, I have little to add, beyond what was given in Journal New York Entomological Society, Vol. V, p. 30. My specimens survived for a time, the last one having died the latter part of November. There was no indication of oviposition, and probably this does not take place until spring, the insect developing to the adult, largely at least, by September. The adults kept, fed daily by puncturing the bark of willow with which they were provided, gouging out the cambium layer. They simply make a hole the size of the beak, and then by circling about excavate a circular cavity under the outer bark. In Europe the species attacks *Salix cinerea*, *S. alba*, *Populus*, *Betula*, *Alnus*, and *Rumex hydro-lapathum*, from which last it probably derived its specific name.

#### EXPLANATION OF PLATE X.

Fig. 1. Adult, larva, and excreta of the latter, of *Oberca bimaculata* Oliv.

Fig. 2. Section of twig burrowed out by *O. bimaculata*, showing holes in the walls for ejection of the excreta of the larva.

Fig. 3. *Cyllene picta* Drury.Fig. 5. *Valgus canaliculatus* Fab.Fig. 4. *Cyllene robinie* Forst.Fig. 6. *Cryptorhynchus lapathi* Gyll.

All figures are slightly enlarged, and drawn from nature by Miss Lydia M. Hart, under supervision.

## PROCEEDINGS OF THE NEW YORK ENTOMOLOGICAL SOCIETY.

MEETING OF APRIL 20, 1897.

Held at the American Museum of Natural History.

Vice-President Dr. Love in the chair. Thirteen members present.

The Publication Committee reported that a lecture, by Prof. L. A. Best, had been given and called attention to the next by Dr. E. G. Love, to be held April 24th.

A vote of thanks was given to Professor Lyman A. Best for his lecture given before the Society.

Mr. Joutel spoke on the breeding habits of beetles. He stated that each species always worked in the same way, and that some larvæ live only on the sap that they cause to flow from their wounding the trees and so renders it impossible to raise them in the breeding box. He exhibited a collection of fifty species mostly Longicorns bred by him, among which were *Callidium antennatum*, four species of *Elaphidion*, *Heterachthes 4-maculatus*, *Phyton pallidum*, *Stenosphenus notatus*, *Cyllene pictus*, *X. colonus*, two species of *Euderces*, *Leptura emarginata*, *L. lineola*, *Cryptophorus verrucosus*, *Saperda puncticollis*, *moesta*, *discoidea* and *obliqua*, *Elasmocerus terminatus* and *Ichneia laticollis*.

Dr. H. G. Dyar spoke on the morphology of the abdominal legs of the Megalopygidae. He showed that there were two sets of legs of different functions, first, the ordinary legs with hooks on abdominal segments 3 to 6 and 10, used for prehension, and second, a series of paired soft pads on segments 2-7 used as sucking disks for adhering to smooth surfaces. The structure is peculiar and proves interesting as leading up to the creeping disks of the Eucleidæ where the prehensile legs have disappeared and the disk is formed by an extension of these short pads.

Mr. R. L. Ditmars read a paper entitled "Spiders," in which he gave a short history of their classification and structure, together with a sketch of their habits and uses. He called attention to their poison glands and fangs and compared them with those of the poisonous snakes. He illustrated their webs and explained their mode of construction.

MEETING OF MAY 4, 1897.

Held at the American Museum of Natural History.

President Palm in the chair. Ten members present.

A vote thanks was given to Dr. E. G. Love for his lecture on the "Study of Insects and their Transformations," delivered on April 24th.